

APPLICANT(S): OWEN, John Robert et al.

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## **REMARKS**

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

### **Status of Claims**

Claims 1-6 are pending in this application. Claims 1-6 have been rejected.

Claim 1 has been amended herein. Applicants respectfully assert that the amendments to the claims and specification add no new matter.

Claims 2-4 have been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicants reserve all rights in these claims to file divisional and/or continuation patent applications.

## **CLAIM REJECTIONS**

### **35 U.S.C. § 103 Rejections**

In the Office Action, the Examiner rejected claims 1-5 under 35 U.S.C. § 103(a), as being unpatentable over Nagai et al. (Japanese Patent No. 6160344) in view of Sullivan et al. (Analytical Chemistry, October 1999, 71(19), pp. 4369-4375). Applicants traverse this rejection.

Nagai et al. teach an electrochemical nitrogen oxide detector that measures current generated as the result of chemical reaction with nitrogen oxide having a pair of electrodes on both sides of an oxygen ion conductive solid electrolyte. The cathode electrode contains a tungsten oxide and/or a copper-based superconductive metal oxide and a precious metal. The electrodes connect a DC voltage source serially by means of a lead wire to configure a closed circuit. A nitrogen oxide is selectively adsorbed on the electrode by a tungsten oxide or the oxide and is dissolved into oxygen and nitrogen through the electric field generating by the DC voltage source, then the generating current value will become larger because the precious metal detects oxygen molecular in a dissolved generated matter. As such, it is not necessary to raise the temperature of electrochemical element during measurement. (See Abstract)

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According to the Examiner, Nagai et al. fail to teach a plurality of regions for testing the samples. The Examiner stated that Sullivan et al. teach applying multiple electrodes onto one substrate so that the electrochemical response of each electrode can be monitored and that it would have been obvious to apply multiple regions of testing because a combinational approach to electrode analysis allows a number of different samples to be tested more or less simultaneously, saving time.

Applicants note that the Examiner previously stated, with regard to claim 2, that the material to be tested is not materially present in the sensor itself nor a part of the electrochemical cell, and that the limitations of claim 2 are regarding the intended use or method for the cell and do not carry patentable weight in the claim to an apparatus. Applicants have amended independent claim 1 to incorporate the limitations of claim 2, such that amended independent claim 1 now recites that the electrochemical cell comprises samples of electrocatalytic material an electrolyte that contains material whose reaction is to be catalyzed.

Applicants contend that neither Nagai et al. nor Sullivan et al. teach or suggest an electrochemical detector wherein the sample of material to be tested is an electrocatalyst and wherein the electrolyte within the electrochemical cell contains the material whose reaction is to be catalysed by said electrocatalyst.

Accordingly, amended independent claim 1 is allowable over the combination of Nagai et al. and Sullivan et al. Claim 5, which is dependent upon amended independent claim 1, includes all the limitations of amended independent claim 1 and is therefore also allowable.

The Examiner also rejected claim 6 under 35 U.S.C. § 103(a), as being unpatentable over Nagai et al. in view of Sullivan et al. and in further view of Wachsman et al. (U.S. Patent Application Publication No. 2003/066519). Applicants traverse this rejection.

The patentability of amended independent claim 1 with respect to the Nagai et al. and Sullivan et al. references is discussed above, and that discussion is applicable here. Wachsman et al. do not solve the deficiencies of Nagai et al. and Sullivan et al. with respect to amended independent claim 1, such that amended independent claim 1 is patentable also over the combination of Nagai et al. and Sullivan et al. in further view of Wachsman et al. Claim 6, which is dependent upon amended independent claim 1, includes all the limitations of amended independent claim 1 and is therefore also allowable.

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In the Office Action, the Examiner also rejected claims 1-6 under 35 U.S.C. § 103(a), as being unpatentable over Wachsman et al. (U.S. Patent Application Publication No. 2003/066519) in view of Sullivan et al. Applicants traverse this rejection.

Wachsman et al. teach a solid state electrochemical cell for measuring the concentration of a component of a gas mixture, including two semiconductor electrodes whose materials are selected so as to undergo a change in resistivity upon contacting a gas component, such as CO or NO. An electrolyte is provided in contact with the first and second semiconductor electrodes, and a reference cell can be included in contact with the electrolyte. Preferably, a voltage response of the first semiconductor electrode when exposed to the component is opposite in slope direction to that of the second semiconductor electrode to produce a voltage response equal to the sum of the absolute values of the individual voltages generated.

According to the Examiner, Wachsman et al. fail to teach a plurality of regions for testing the samples but that Sullivan et al. teach applying multiple electrodes onto one substrate so that the electrochemical response of each electrode can be monitored and that it would have been obvious to apply multiple regions of testing because a combinational approach to electrode analysis allows a number of different samples to be tested more or less simultaneously, saving time.

Applicants note that the Examiner previously stated, with regard to claim 2, that the material to be tested is not materially present in the sensor itself nor a part of the electrochemical cell, and that the limitations of claim 2 are regarding the intended use or method for the cell and do not carry patentable weight in the claim to an apparatus. Applicants have amended independent claim 1 to incorporate the limitations of claim 2, such that amended independent claim 1 now recites that the electrochemical cell comprises samples of electrocatalytic material an electrolyte that contains material whose reaction is to be catalyzed.

Applicants contend that neither Wachsman et al. nor Sullivan et al. teach or suggest an electrochemical detector wherein the sample of material to be tested is an electrocatalyst and wherein the electrolyte within the electrochemical cell contains the material whose reaction is to be catalysed by said electrocatalyst.

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Accordingly, amended independent claim 1 is allowable over the combination of Wachsman et al. and Sullivan et al. Claims 5 and 6, which are dependent upon amended independent claim 1, include all the limitations of amended independent claim 1 and are therefore also allowable.

### **Conclusion**

In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



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